

Cosco

Johnson Controls' injection equipment vital to success of Cosco's new FPSO



Project overview

Global shipping group COSCO has completed the construction of a FPSO (Floating Production Storage and Offloading) vessel at its QiDong shipyard in China. The vessel will play a vital role in maintaining the economic flow of oil, once deployed in the Western Isles area of the North Sea. With government permission granted for drilling to commence in the region close to the Harris and Barra fields, a predicted yield flow of 40,000 barrels a day meant that the vessel would require large-scale chemical injection equipment to ensure maximum productivity. Johnson Controls was enlisted to deliver the required components, pivotal to the completion and success of the \$1.6 billion investment.

Product and services applications

- Chemical Injection System – including carbon steel skids and stainless steel chemical reservoirs
- 3D CAD design drawings

Customer needs

To maintain the continual, large-scale production on the vessel, the installation of a Chemical Injection System was crucial. Johnson Controls's chemical injection package consisted of four carbon steel skids, with various capacity stainless steel reservoirs to contain and deliver chemicals throughout the Oil and Gas process subsea, surface and topside.

Similarly, the installation of a Methanol Injection Skid was also vital to maintain flow rate. The flow rate for such technology is commonly around 2,000 litres per hour, however, in this instance, the sheer scale of work taking place meant the vessel would require a flow rate of 12,000 litres per hour.

Johnson Controls called on two of its most trusted partners to assist in the construction process, with a local company fabricating the methanol package, which included a 60,000 litre pressure vessel to be mounted on the largest of the skids to contain the methanol. The idea behind this unusually high capacity is to significantly reduce the number of supply replenishments the FPSO will require during its time in the Western Isles. This will offer corresponding cost savings by reducing the number visits to the FPSO to replenish the methanol and potentially prevent interruptions to the work if adverse weather prevents supply vessels reaching the fields."

Johnson Controls solution

The manufacturing process for the £6 million project took place at Johnson Controls's facility in Norwich. The specifications of the skids are the largest Johnson Controls has ever produced.

Johnson Controls liaised with COSCO and Dana Petroleum throughout the tender and design process generating 3D CAD drawings and specifications for further evolution.

The enormity of the project commanded even further additions to the extensive health and safety practices that the company adheres to. This involved the construction of a temporary scaffolding enclosure outside the building, to accommodate the large-scale requirements of the project.

To avoid loss of production the methanol and chemical injection systems have been designed with back up of many critical components such as the pumps, flow control valves and flow meters. In the event of a system failure, it can be switched from the duty to the standby component to maintain production.

Johnson Controls' conscientious approach to these factors helped COSCO maintain production, achieving the milestone of completing over two million man-hours on the project without incurring any time loss incidents.



For further information or advice, call: **0800 804 6227**

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